AMENDMENTS TO THE CLAIMS

1-2. (Cancelled)

3. (Original) A single crystal substrate comprising:

a langasite substrate with a SAW propagation surface; and

input and output IDTs having electrodes on the surface for launching and/or detecting

surface acoustic waves, wherein a direction of surface wave propagation is parallel to an X'-axis,

and the substrate further has an Z'-axis perpendicular to the surface and a Y'-axis parallel to the

surface and perpendicular to the X'-axis, the langasite substrate having a crystal orientation

defined by modified axes X, Y and Z, the relative orientation of axes X', Y' and Z' being

defined by Euler angles ϕ , θ and ψ , in which ϕ is 0° , θ is in a range of $12^{\circ} \le \theta \le 17^{\circ}$, and ψ is in a

range of $73^{\circ} \le \psi \le 78^{\circ}$.

4. (Original) The single crystal substrate according to claim 3, wherein optimal Euler

angles of the langasite are $\phi = 0^{\circ}$, $\theta = 14.6^{\circ}$ and $\psi = 76.2^{\circ}$.

5. (Original) A single crystal substrate comprising:

a quartz substrate with a SAW propagation surface; and

input and output IDTs having electrodes on the surface for launching and/or detecting

surface acoustic waves, wherein a direction of surface wave propagation is parallel to an X'-axis,

and the substrate further has an Z'-axis perpendicular to the surface and a Y'-axis parallel to the

surface and perpendicular to the X'-axis, the quartz substrate having a crystal orientation defined

Birch, Stewart, Kolasch & Birch, LLP

JTE/GH/cl

Application No. 10/517,067 Amendment dated January 3, 2007

Reply to Office Action of November 2, 2006

Docket No.: 3449-0404PUS1

Page 3 of 8

by modified axes X, Y and Z, the relative orientation of axes X', Y' and Z' being defined by

Euler angles ϕ , θ and ψ , in which ϕ is in a range of $-5^{\circ} \le \phi \le +5^{\circ}$, θ is in a range of $60^{\circ} \le \theta \le 80^{\circ}$

and ψ is in a range of $-5^{\circ} \le \psi \le +5^{\circ}$.

6. (Original) The single crystal substrate according to claim 5, wherein optimal Euler

angles of the quartz are $\phi = 0^{\circ}$, $\theta = 70.5^{\circ}$ and $\psi = 0^{\circ}$.

7. (Original) A single crystal substrate comprising:

a quartz substrate with a SAW propagation surface; and

input and output IDTs having electrodes on the surface for launching and/or detecting

surface acoustic waves, wherein a direction of surface wave propagation is parallel to an X'-axis,

and the substrate further has an Z'-axis perpendicular to the surface and a Y'-axis parallel to the

surface and perpendicular to the X'-axis, the quartz substrate having a crystal orientation defined

by modified axes X, Y and Z, the relative orientation of axes X', Y' and Z' being defined by

Euler angles ϕ , θ and ψ , in which ϕ is 0° , θ is in a range of $17^{\circ} \le \theta \le 23^{\circ}$ and ψ is in a range of

 $10^{\circ} \le \psi \le 20^{\circ}$.

8. (Original) The single crystal substrate according to claim 7, wherein optimal Euler

angles of the quartz are $\phi = 0^{\circ}$, $\theta = 20^{\circ}$ and $\psi = 13.7^{\circ}$.

9. (Original) A single crystal substrate comprising:

a lithium tantalate substrate with a SAW propagation surface; and

input and output IDTs having electrodes on the surface for launching and/or detecting surface acoustic waves, wherein a direction of surface wave propagation is parallel to an X'-axis, and the substrate further has an Z'-axis perpendicular to the surface and a Y'-axis parallel to the surface and perpendicular to the X'-axis, the lithium tantalate substrate having a crystal orientation defined by modified axes X, Y and Z, the relative orientation of axes X', Y' and Z' being defined by Euler angles ϕ , θ and ψ , in which ϕ is in a range of $-5^{\circ} \le \phi \le +5^{\circ}$, θ is in a range of $70^{\circ} \le \theta \le 90^{\circ}$ and ψ is in a range of $85^{\circ} \le \psi \le 95^{\circ}$.

10. (Original) The single crystal substrate according to claim 9, wherein optimal Euler angles of the lithium tantalate are $\phi = 0^{\circ}$, $\theta = 79^{\circ}$ and $\psi = 90^{\circ}$.

11. (Original) A single crystal substrate comprising:

a lithium tantalate substrate with a SAW propagation surface; and

input and output IDTs having electrodes on the surface for launching and/or detecting surface acoustic waves, wherein a direction of surface wave propagation is parallel to an X'-axis, and the substrate further has an Z'-axis perpendicular normal to the surface and a Y'-axis parallel to the surface and perpendicular to the X'-axis, the lithium tantalate substrate having a crystal orientation defined by modified axes X, Y and Z, the relative orientation of axes X', Y' and Z' being defined by Euler angles ϕ , θ and ψ , in which ϕ is in a range of $-5^{\circ} \le \phi \le +5^{\circ}$, θ is in a range of $160^{\circ} \le \theta \le 180^{\circ}$ and ψ is in a range of $85^{\circ} \le \psi \le 95^{\circ}$.

12. (Original) The single crystal substrate according to claim 11, wherein optimal Euler angles of the lithium tantalate are $\phi = 0^{\circ}$, $\theta = 168^{\circ}$ and $\psi = 90^{\circ}$.

13. (Original) A single crystal substrate comprising:

a lithium tantalate substrate with a SAW propagation surface; and

input and output IDTs having electrodes on the surface for launching and/or detecting surface acoustic waves, wherein a direction of surface wave propagation is parallel to an X'-axis, and the substrate further has an Z'-axis perpendicular to the surface and a Y'-axis parallel to the surface and perpendicular to the X'-axis, the lithium tantalate substrate having a crystal orientation defined by modified axes X, Y and Z, the relative orientation of axes X', Y' and Z' being defined by Euler angles ϕ , θ and ψ , in which ϕ is in a range of $-5^{\circ} \le \phi \le +5^{\circ}$, θ is in a range of $20^{\circ} \le \theta \le 40^{\circ}$ and ψ is in a range of $5^{\circ} \le \psi \le 25^{\circ}$.

14. (Original) The single crystal substrate according to claim 13, wherein optimal Euler angles of the lithium tantalate are $\phi = 0^{\circ}$, $\theta = 30^{\circ}$ and $\psi = 16.5^{\circ}$.

15-20. (Cancelled)